

NOVEMBER/DECEMBER 2025

**23PSPH35 — ELECTRICAL CIRCUIT
NETWORK SKILLS**

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define impedance.
2. Differentiate between AC and DC.
3. Define schematics.
4. What is the symbol for a resistor, transformer and inductor?
5. Write the function of a capacitor filter.
6. Define synchronous speed.
7. What is phase reversal protection?
8. What is an overload device?
9. Define crimping.
10. What is voltage drop?



SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Solve a series-parallel circuit with three resistors and one voltage source.

Or

- (b) A single-phase AC source has $V_{rms} = 220V$ and $I_{rms} = 10A$. Find apparent power and power factor.

12. (a) Explain the concept of impedance matching.

Or

- (b) Describe the purpose of grounding.

13. (a) What is the purpose of a motor overload protection?

Or

- (b) Explain the difference between series and shunt resistors.

14. (a) Analyze the operation of a ground-fault protection system.

Or

- (b) Explain the concept of zone selective interlocking (ZSI).

15. (a) Differentiate delta and star connections.

Or

- (b) Explain the purpose of cable trays.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Differentiate AC and DC transmission systems.
17. Explain the principles of transformer operation, including types and applications.
18. Compare AC and DC motor control systems.
19. Compare and discuss different types of electrical protection devices.
20. Discuss about electrical wiring system for a commercial building.
-